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THE AMERICAN REPRESENTATIVES OF *LUZULA* *VERNALIS*.

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ONE of the earliest flowering plants of New England is the Wood Rush which is known in our current manuals as *Luzula vernalis* or *Juncoides pilosum*. The plant abounds in rich woods, mountain ravines and gullies, and in recent clearings in the interior districts of New England, New York and Eastern Canada, though it closely approaches the coast only in the northern portion of its range. And on account of its early flowering, in April and May, the species is familiar to many who later in the season devote little attention to the *Juncaceae*.

Since the days of Muhlenberg,¹ the American plant has been generally maintained as identical with the European species *Luzula vernalis*, Lamarck & DeCandolle (*L. pilosa*, Willd., *Juncus vernalis*, Reichard, *J. pilosus*, var. *a*, L.), yet that remarkable student of our northern vegetation, Sir William Hooker, noted in 1839 that the American plant differs from the European, and he designated it as *Luzula pilosa*, β , with "floribus pallidis."² Again, in 1890, Professor Franz Buchenau, though treating the American and European plants as essentially the same, commented on the tendency of the American plant to produce elongate stolons: "Bei den Exemplaren aus Nordamerika sah ich wiederholt eine ausläuferartige Streckung der grunständigen Triebe. Es bleibt zu beachten, ob dies in der neuen Welt häufiger vorkommt als in der alten."³ These two features, paler flowers and more elongate or stoloniferous base, are usually evident in the American plant, but they are accompanied by

¹ Muhl. Gram. 200 (1817). ² Hook. Fl. Bor. Am. ii. 188 (1839).

³ Buchenau, Mon. Junc. 85—Engl. Bot. Jahrb. xii. 85 (1890).

other and more significant characters which separate the New World material very readily from the European.

If we examine specimens or good plates¹ of the European *Luzula vernalis* (*L. pilosa*) we shall see that the plant is caespitose but scarcely if at all stoloniferous. The inflorescence is umbelliform, but most of the unequal elongate stiff peduncles are terminated by small cymes, the lateral branchlets or pedicels being strongly divergent. The sepals and petals are firm and lucid, deep brown or castaneous, with paler margins. The lucid (as if varnished) capsule is conic-globose at base, blunt or subtruncate with a short mucro at tip.

The American plant which has oftenest passed as *Luzula vernalis* is loosely caespitose with slender elongate and freely branching rootstock. Its umbelliform inflorescence is usually quite simple, though a few of the filiform flexuous peduncles are sometimes anthelate, bearing 2 (or very rarely 3) remote flowers toward their tips. The sepals and petals are softer and duller, usually pale brown with white margins. The slightly lucid or dull capsule is broadly conic-ovoid, tapering gradually to the tip. In fact, the plant so characteristic of rich woods in the Appalachian district and the interior forested region of North America has little in common with *Luzula vernalis* of Europe. It is not, however, strictly confined to eastern America, but like many other species with which it is associated, this plant reappears in northeastern Asia.

In his discussion of *Luzula plumosa*, Meyer, a Central Asian species resembling *L. vernalis* (*L. pilosa*), Professor Buchenau says: "echte *L. pilosa* aus Ostasien sah ich noch nicht; vielleicht gehört aber doch dahin die von der Amerikanischen Pacific-Expedition (1853-56) bei Petropaulowsk in Kamschatka gesammelte Pflanze."² The Kamtschatkan plant referred to by Professor Buchenau was collected by Charles Wright, and the material in the Gray Herbarium matches exactly in stolons, inflorescence, flower and capsule the plant of eastern America.

This American and Kamtschatkan plant so long confused with the European *Luzula vernalis* is quite as unlike other recognized species of the subgenus *Pterodes*, although by Dr. J. K. Small it has been considered³ the same as *Luzula Carolinae*, Watson.⁴ *L. Caro-*

¹ For example: Flora Danica, iii. t. 441 (1770); Sowerby, Engl. Bot. xi. t. 736 (1800); Host, Gram. iii. t. 100 (1805); or Syme, Engl. Bot. x. t. 1548 (1873).

² Buchenau, l. c. 86. ³ Torrey, i. 74 (1901). ⁴ Proc. Am. Acad. xiv. 302 (1879).

linae is a little known plant of the Carolina Mountains. It was based on an over ripe specimen from Grandfather Mountain, and again collected at Biltmore (Bilt. Herb. no. 1185b distributed as *L. pilosa*); and though the species is reduced by Dr. Small to *L. pilosa* (*Juncoides pilosum*), the two sheets of it in the Gray Herbarium show a plant with the cauline leaves 5 to 13 cm. long, the dark flowers on loose anthelate peduncles, the filaments nearly as long as the anthers, and the valves of the old capsules much narrower than in the common American plant and quite unlike those of the European *L. vernalis* (*L. pilosa*). *L. Carolinae* is more nearly related to the Asiatic *L. plumosa*, Meyer. From that species, however, it is distinguished by its broader longer leaves and more flexuous peduncles; and from the material at hand it seems to be a local species of the Carolina Mountains. The widely distributed American plant which has been associated with it and more generally with the European *L. vernalis* (*L. pilosa*) is here proposed as

LUZULA saltuensis. Loosely caespitose, with elongate slender branching rootstocks: stems erect, smooth, terete, 1 to 4 dm. high: basal leaves lance-linear, flat, loosely hairy or glabrate, 1 to 2.5 dm. long, 4 to 12 mm. broad: the 2 to 4 stem-leaves 1.5 to 4.5 cm. long, lanceolate, with thick blunt callous tips: inflorescence umbelliform, subtended by a short leaf like bract; the 5 to 15 filiform somewhat unequal loosely spreading or flexuous peduncles in anthesis 0.5 to 1 cm. long, in fruit becoming 1.5 to 3 cm. long, usually 1-flowered, rarely with 2 or 3 remote flowers: flowers 3 to 4 mm. long; prophylla ovate, whitish, translucent, erose: sepals and petals firm, subequal, triangular-lanceolate, attenuate, brown with pale translucent narrow margins: stamens 6, one-half or two-thirds as long as the sepals and petals; the linear-oblong anthers many times exceeding the filaments: ovary conic, deeply three lobed; style about equalling the three erect stigmas: capsule broadly conic-ovoid, attenuate, pale, 3.5 to 4.5 mm. long, equalling or exceeding the calyx: seed subglobose, reddish brown or darker, 2 mm. in diameter, terminated by a long pale twisted caruncle.—*L. pilosa*, Muhl. Gram. 200 (1817), and Am. authors, not Willd. *L. pilosa*, β , Hook. Fl. Bor.-Am. ii. 188 (1839). *L. vernalis*, Wats. & Coult. in Gray Man. ed. 6, 546 (1890), not Lam. & DC. *Juncoides pilosum*, Coville, Mem. Torr. Club, v. 108 (1894), not *Juncodes pilosum*, O. Kuntze, Rev. Gen. Pl. ii, 725 (1891).—Rich woods, clearings and banks of streams, Newfoundland to Saskatchewan, south to New York, Michigan, and Minnesota, and in the mountains to Georgia; also Kamtschatka. The following are characteristic specimens. MAINE, Masardis, June 8, 1898, Orono, June 4, 1898 (*M. L. Fernald*, nos. 2510, 2511); Orono, May 14, 1902 (*M. L. Fernald* in *Plantae exsiccatae Grayanae*, no. 85); Somes-

ville, June 23, 1891 (*E. & C. E. Faxon*); Mechanic Falls, May 15, 1897 (*J. A. Allen*); North Berwick, June 8, 1891 (*J. C. Parlin*): NEW HAMPSHIRE, Franconia, June 9, 1887 (*E. & C. E. Faxon*); Barrett Mt., New Ipswich, June 5, 1896 (*M. L. Fernald*); Walpole, May 3, 1901 (*W. H. Blanchard*): VERMONT, Charlotte, May 30, 1892 (*C. G. Pringle & W. W. Eggleston*); Johnson, May 23, 1893, May 2, 1894 (*A. J. Grout*): MASSACHUSETTS, Mt. Wachusett, May 18, 1895 (*J. F. Collins*); Southbridge, May 5, 1899 (*R. M. Harper*); Williamstown, May 29, 1898 (*J. R. Churchill*): CONNECTICUT, Salisbury, June 5, 1901 (*C. H. Bissell*): NEW YORK, Pleasant Valley, Oneida Co., May 21, 1901 (*J. V. Haberer*, no. 962); Rochester, May 21, 1863 (*Wm. Boott*): ONTARIO, Belleville, May 20, 1878 (*J. Macoun*): MICHIGAN, Sand Hills near Detroit, May 7, 1865 (*Wm. Boott*): WISCONSIN, Milwaukee (*I. A. Lapham*): GEORGIA, Clarke Co., March, 1897 (*R. M. Harper*): KAMTSCHATKA, Petropaulovski (*C. Wright*, Herb. U. S. North Pacific Expl. Exped. 1853-56).

GRAY HERBARIUM.

AN HOUR IN A CONNECTICUT SWAMP.

ORRA PARKER PHELPS.

SALISBURY, the town occupying the northwestern corner of Connecticut, seems to be especially rich in species commonly reported further north. At least two articles relating to its flora have appeared in RHODORA within a year. The town presents a diversity of soil, and within its borders may be found lakes, mountains, meadows and cold swamps. It is, perhaps, in the swamps that one may find the greatest treasures. A twenty acre swamp bordering on two tiny lakes and extending to limestone cliffs on the east almost tempts me to accept the challenge of Mr. Rich in RHODORA, iv. 87. But that must wait until another season. Let this article hint at its possibilities. Along the western border of the swamp is a dense wood of pines and hemlocks. In a little opening where the brook comes through is a colony of ostrich ferns, together with many other species more common. A form of *Osmunda cinnamomea* with deeply incised pinnules making a beautiful "freak" is not unusual. On the cliffs to the east the walking fern flourishes. Among the many shrubs, *Rhamnus alnifolia* is abundant and *Taxus Canadensis* clothes the scattered dry hummocks and knolls with its own peculiarly brilliant dark green.